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ABSTRACT

This book introduces journal-writing prompts in mathematics for grades 1-2. Content prompts, attitudinal or affective prompts, and process prompts are presented. Each of the content prompts relates or connects topics within and outside of mathematics, targeting important or meaningful concepts and skills. The content prompts also provide situations that focus on areas in which students often have misunderstandings or misconceptions. Attitudinal or affective prompts focus on students' feelings about themselves as mathematicians and students of mathematics. The responses to the process prompts can give insight into students' preferences for problem-solving strategies and how they learn or remember. (KHR)

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The "Write" Way

Mathematics Journal Prompts

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FOR GRADES 1–2

Barbara J. Dougherty

A Publication of the University of Hawai'i's
Curriculum Research & Development Group

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FOR GRADES 1–2

Barbara J. Dougherty

A Publication of the University of Hawai'i's
Curriculum Research & Development Group

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Using Writing in Your Classes

1. Share with students the rubric you are using.

2. Make copies of the rubric for students to keep in their notebooks and post one copy in the classroom.

3. Give students a practice prompt to write about. Allow about six minutes for them to respond. The practice prompt is usually an affective/attitudinal one. Regardless of the type you select, it should be one that all students can attempt.

4. Have students compare what they wrote with samples of other students' work that you provide. Or ask them to compare work with their partner or table mate.

5. Compare their work with the rubric. Have students focus on three things they could do to move their writing up a level. If their writing is already at the top level, ask them to write another question that this prompt made them think of.

6. Allow three minutes for students to correct or revise their work. (They should strive to reach the two top levels.)

7. Collect the work.

8. For the first writing prompt to be done outside of class, assign a prompt that you think *all* students can write about.

9. When students return to class with their assignment, have them compare their writing with the rubric.

10. Allow two minutes for students to correct or revise their work. (They should strive to reach the two top levels.)

11. Repeat this phase as often as needed to help students understand your expectations for their writing.

The "Write" Way: Mathematics Journal Prompts for Grades 1–2

The *Principles and Standards for School Mathematics* (National Council of Teachers of Mathematics, 2000) includes a separate standard for Communication for grades pre-K through 2. This standard advocates using multiple activities that give students opportunities to demonstrate their understandings. These tasks should allow students to express themselves in a variety of ways such as with concrete models, pictures or drawings, or abstract symbols. Each of these forms lets students communicate with others about their thinking.

Communication should include at least five types of activities: (1) speaking, (2) reading, (3) listening, (4) modeling or constructing, and (5) writing. The last type can take the form of journal writing.

Journal writing can be structured to give you cohesive and comparable information about students and their thinking while you are challenging them through contextual situations. A structure for journal writing includes (1) mathematical content, (2) students' attitude or affect, and (3) processes.

Journal prompts give situations or questions to which students respond. Responses may include words, pictures or drawings, or symbols. Encourage students to support their ideas and to clearly explain what they mean. They can give specific examples as part of their explanations.

Content prompts relate or connect topics within and outside of mathematics, targeting important or meaningful concepts and skills. They can also provide situations that focus on areas where students often have misunderstandings or misconceptions. The responses to the prompts give teachers (and students) insight into how a student has interpreted a mathematical idea.

Attitudinal or affective prompts focus on students' feelings about themselves as mathematicians and students of mathematics. Students' responses allow you to assess how positive attitudes about mathematics and mathematicians are developing in the classroom environment.

Finally, being aware of how one solves or approaches problems is promoted by **process prompts.** The responses to these prompts can give insight into students' preferences for problem-solving strategies and into how they learn or remember. As students become aware of how they learn and solve problems, they grow stronger in confidence.

Introduction: Grades 1–2

Description of materials

There are at least 100 prompts to choose from. Some of them may be used more than once to ascertain how students are growing in their understandings of and beliefs about mathematics. The prompts may also be used as assessment tasks for expanded response or self-constructed response items.

Each mathematical content prompt includes a short description of what you might expect or consider in students' responses. The mathematical content responses should reflect of a student's progress in understanding the concept or skill.

The content prompts were selected to match recommendations from the National Council of Teachers of Mathematics (*Principles and Standards for School Mathematics*, 2000) rather than to fit a specific text. Locate the topic that you are studying and then select the prompt that best fits the class. You may change the wording if students will not understand the terminology or vocabulary used.

Affective or attitudinal prompt responses show students' beliefs. If you use them more than once, you should be able to detect changes in beliefs or feelings about mathematics as a discipline as the year or semester progresses.

Process prompts give students an opportunity to show how they do a mathematical process or algorithm (step-by-step procedure). When you use these prompts, you gain insight into how students have interpreted or altered procedures.

You can use writing prompts daily or intermittently, depending on your class, and you can repeat them from time to time. In prompts that use students' names, feel free to change the names to represent your students. If you use journal prompts daily, we recommend that students respond to three content prompts, one process prompt, and one attitudinal prompt in a week.

Evaluating students' responses

When we tested journal writing in classes, we found that students tend to give the writing more thought if it is to be scored. One method our writing team used was to score the responses on content rather than on grammar and spelling. We used an essay grading method, reading two or three papers to get a feel for students' responses. These first papers formed the baseline for scoring other papers.

We designed this rubric for scoring journal responses.

4 points: The student's work includes—
- a completed prompt or an answer to the question posed.
- support for statements made by using either examples or counterexamples.
- ideas clearly communicated to the reader.
- legible writing, drawings, pictures, charts or tables, and diagrams.
- accurate mathematics or information.

3 points: Omission of one criterion from level 4.

2 points: Omission of two criteria from level 4.

1 point: Omission of three criteria from level 4.

0 points: Omission of more than three criteria from level 4.

There are many ways to create a rubric. Teachers alone can develop a rubric or students can work with the teacher to develop a rubric specific to their class. Here are two sample rubrics that have been developed with students' participation.

A five-level scale:

4 The student's work shows a response that—

- addresses the question raised in the prompt.
- has correct or accurate mathematics.
- is legible.
- has support or justification for any statements made.
- makes sense to the reader.

3 The student's work shows a response that—

- addresses the question raised in the prompt.
- has correct or accurate mathematics.
- is legible.
- does not have fully justified or supported statements.
- makes sense to the reader.

2 The student's work shows a response that—

- addresses the question raised in the prompt.
- has some incorrect or inaccurate mathematics.
- is legible.
- does not have justified or supported statements.
- is somewhat clear to the reader.

1 The student's work shows a response that—

- addresses the question raised in the prompt.
- has incorrect or inaccurate mathematics.
- is partially legible.
- does not have justified or supported statements.
- does not make sense to the reader.

0 The student's work shows a response that—

- does not address the question raised in the prompt.
- has incorrect or inaccurate mathematics.
- is not legible.
- does not make sense to the reader.

A three-point scale:

Exceeds standard The student's work shows a response that—
- addresses the question raised in the prompt.
- has correct or accurate mathematics.
- is legible.
- has support or justification for any statements made.
- makes sense to the reader.

Meets standard The student's work shows a response that—
- addresses the question raised in the prompt.
- has some correct or accurate mathematics.
- is legible.
- does not support or justify some of the statements made.
- makes sense to the reader.

Below standard The student's work shows a response that—
- does not address the question raised in the prompt.
- has incorrect or inaccurate mathematics.
- is not legible.
- does not support or justify statements made.

Although grammar and punctuation are not usually scored, students should communicate their ideas in ways that are understandable. Some students may use drawings, tables, charts, or other means to convey their ideas. Encourage them to use whatever way they need to make their ideas clear.

After the first writing assignment, you can take excerpts from students' papers to illustrate qualities that you consider important. Show comparisons between high- and low-quality responses by putting them on overhead transparencies or photocopying them for all students. Keep the responses anonymous.

Content Prompts: Grades 1–2

Students writing skills in grade 1 will constrain the form of their responses. Instead of asking them to construct a response, use the prompts in other ways. You may want to read the prompt to the class along with writing it on the board or overhead.

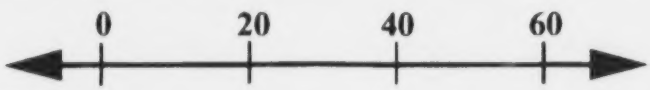
You can present the prompt to the whole class and have students share ideas. You can record their ideas on big chart paper or on the board. The chart paper provides a permanent record that can be revisited later in the year to check the progress of students understanding of or thinking about mathematical concepts or skills. At that time, you can revise students comments or add new ideas.

If your mathematics program involves parents, you can assign the prompts as homework. The parents can record any textual information the student shares.

You can also use the prompts in a problem-solving context where students create a solution in a group or individually. If groups work on the problems, they can share their ideas before the whole class. If they work individually, you will need to find some way to provide for a sharing of ideas. Either way, their ideas should be recorded for future reference.

I. Number and Operations

1. **Sam found a number line. He wanted to put 47 on the number line. Where do you think it belongs? Show where you think 47 belongs. How did you decide where to put it?**



Students should indicate a placement close to 40, with a written or oral explanation. You can decide an appropriate placement but you should consider a point a bit to the right of 40.

2. **Jack used 5 base-ten blocks to make a number. It was the smallest amount of blocks needed. What number could he have made? Explain your answer. Draw the blocks he used.**

   This prompt has multiple answers. Some students respond that it could be 5 (5 unit blocks), 50 (5 ten blocks), 14 (1 ten and 4 units), 500 (5 hundred squares), 104 (1 hundred block and 4 units) and so on. Students should draw the blocks they think Jack used. Encourage them to find multiple answers.

3. **Sara rounded a number to 100. What number do you think she rounded? Why?**

   There are multiple responses. Some students may select a number smaller than 100 but larger than 50 while other students will look for a number larger than 100 but smaller than 150. Students should include an explanation.

4. **Carla, a second-grader, has 850 M&Ms. Can she hold all of them in her hand? Why? If not, how many do you think she can hold?**

   Answers will vary. Check for reasonableness of the number of M&Ms that she can hold in her hand. Some reasonable responses could include any number of M&Ms less than 30.

5. **Thomas said, "802 is greater than 820." Robert said, "No, it's not." Who is correct? Why do you think that person is correct?**

   Students should show that Robert is correct. They may "prove" he is correct by drawing or showing with manipulatives (such as base-ten blocks) that 820 is greater than 802.

6. **Casey wrote 5 + 6 = 11 on the board. What does " =" mean?**

   Responses should show some representation of equivalence. Students may show that two sets, one containing five items and one containing six items, can be combined to have a set of eleven items.

7. **Draw two sets that are equal. Now draw two sets where one set is greater than the other. Explain your drawings.**

   Answers will vary. Students should indicate which sets are equal and which are unequal. They should also explain their drawings.

8. **Josh said, "I was fifth in line and I was also last in line." Can this be true? Why or why not?**

   It can be true if there are only five people in line. Students may explain this with a drawing.

9. **Draw a picture that shows you are the tenth person in line.**

   Answers will vary. A drawing should show at least 10 people in a line.

10. **Jenny has seven coins that equal 25¢. What could the coins be?**

    Jenny has five pennies and two dimes. Students' response may show a drawing of the seven coins.

11. **Sam has 10 coins and Sal has 12 coins. Sam says he has more money than Sal. How could this be true?**

    Answers will vary. For example, Sal could have 12 pennies while Sam has 10 dimes. Students should notice that the number of coins does not indicate the amount of money.

12. **Trina will pay you to make a word. Every consonant is worth 50 cents and every vowel is worth 10 cents. CAT would be worth $1.10 or 110 cents. Make a word and show how much you will be paid. Can you make a word worth 120 cents?**

    Answers will vary. For example, students could make the word PLAY, which would be worth $1.60 or 160 cents. For 120 cents, accept any word with that total. One example is FEET.

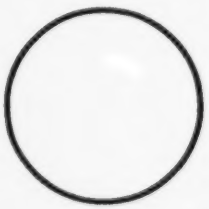
13. Write a word problem that uses money. Show how to solve the problem.

Answers will vary. Check the problem's context for appropriate use of money concepts. Share particularly good problems with the class as a problem-solving task.

14. Make a riddle or a puzzle about a coin or coins. Show your answer.

This is a good prompt to use in class. Students can share with other groups or individuals.

15. Garth cut a chocolate pie so that he and three friends could each have an equal-sized piece. Draw how he cut the pie.



Answers will vary. Allow responses that show four equal-sized pieces as well as responses that show more than four pieces. Regardless of the number of pieces, all of the pieces should be the same size.

16. I think a fraction is . . .

Answers will vary. Watch student responses for an indication of a relation of parts to wholes.

17. Write a word problem that uses or shows one half of something.

Answers will vary. Check problems for an appropriate context for one half of a thing or a group of things. As an extension, you can ask students to share their word problem with the class. Have other

students or the class solve the problem. For another extension, have students explain what one half of something means. Students' models may present different representations of one half.

18. Jessica had to find a number to go in the blank for this problem:

6 + ___ = 15.

Find the missing number. Describe how you found the answer. Or draw a picture that shows how you found the answer.

The missing number is 9. Students should describe or show their process. Watch for responses that use inverse operations, counting on or counting up, counting down, or a fact family. Their processes would be interesting to discuss in class. Other numbers can be substituted in the number sentence to fit the level of your class.

19. Emily had to find the missing number in this number sentence:

17 – ___ = 9.

Find the missing number. Describe how you found the answer. Or draw a picture that shows how you found the answer.

The missing number is 8. Students should describe or show their process. Watch for responses that use inverse operations, counting on or counting up, counting down, or a fact family. Their processes would be interesting to discuss in class. Other numbers can be substituted in the number sentence to fit the level of your class.

20. Draw a picture and write a number sentence that shows what *addition* means.

Answers will vary. Responses should show models for addition rather than a "fact." Change the prompt by substituting subtraction, multiplication or division for addition. For addition, expect a "combining" picture. Subtraction has several models: take-away, missing addend, and comparison. Multiplication, can be represented by an array, combinations, or repeated addition. Division is represented by partitioning, grouping, or repeated subtraction.

21. "I don't have enough M&Ms to share with all of my seven friends," said Chuck. "I have 25 M&Ms." How many more M&Ms does Chuck need so that all 8 people will get an equal amount? Explain your answer.

Chuck needs seven more M&Ms. Students should explain their answer and process.

II. Algebra

1. Kayla made a number pattern: 1, 3, 5, 7, 9 . . . She said her rule was to add 2. Make a different number pattern. Describe your rule.

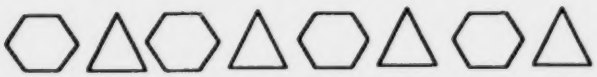
Answers will vary. Students' patterns should be consistent within the example they give. The rule should be clearly defined. These can be put on notecards and exchanged with other students.

2. Charita wrote, 1, 3, 5, 7, . . . Find two ways to describe the number pattern. Find the next three numbers that will come after 7.

Answers will vary. One way is to say that there is one number between each number in the pattern OR that one number is missing between every two numbers in the pattern (i.e., 2 is between 1 and

3, 4 is between 3 and 5, and so on). Another way is to add 2 to each number to get the next number. Or these are the odd numbers. Students should show that the next three numbers are 9, 11, and 13.

3. **Sisco made a pattern with shapes.**



Create a pattern that uses three shapes. Draw your pattern. Describe it in words.

Answers will vary. Students should have a consistent rule that they use to draw the pattern. Instead of drawing their pattern, students could use attribute or shape blocks to make the pattern and then describe it orally.

4. **A pattern I see at home is . . .**

Answers will vary. Have students tell about their patterns in front of the whole class or in small groups.

5. **2 + 4 = 6** **2 + 10 = 12**
2 + 6 = 8 **2 + 12 = 14**
2 + 8 = 10 **2 + 14 = 16**

Describe the pattern.

Students may describe the change in the addend and its effect on the sum. Encourage them to verbalize the pattern by extending it. How could this pattern help them find the sum of two numbers?

6. **Sandy said, "I am adding two numbers. If one of the numbers is increased by three, what will happen to the sum?" What would you tell Sandy?**

Students should note that if one addend is increased by three, the sum will also increase by three. If students have a difficult time with the wording, show an example such as $1 + 3 = 4$, $1 + 6 = \Delta$. *What do you notice?*

7. **Jeremy said, "When I skip-count by 5s, it takes me longer to get to 100 than when I skip-count by 2s." Anna said, "That's impossible. It should not take as long." Why would Anna say that?**

   Anna would say that counting by fives uses fewer numbers than counting by twos. Therefore it takes less time.

8. **Terry was having difficulty counting by 10s. Brad said, "It's easy to count by 10s because there is a pattern." What pattern could Brad notice? Describe it.**

   Answers will vary. Some students may note that when counting by 10s, if they start at 0 or 10, each number will end in 0. However, if the starting point for counting by 10s is a different number, they may generalize and say that the ones digit remains the same while the tens digit increases by one each time. Other patterns may be noticed as well.

9. **Skip-counting by 3s is like (not like) skip-counting by 5s because . . .**

   Answers will vary. Responses may include a comparison about the process of skip-counting. That is, students may say that skip-counting by 3s is like skip-counting by 5s because you "skip" numbers in between the numbers you say. Or students may comment that skip-counting by 3s is not like skip-counting by 5s because there are two numbers between each number when you skip-count by 3s and there are four numbers between each number when you skip-count by 5s.

10. Shanda was eating a gooey hot fudge sundae last night while she was doing her homework. She dripped some hot fudge on her homework paper. What could go under the blobs of hot fudge?

12 + **+** **= 29**

Find at least two possible answers. Explain your answers.

Answers will vary. For example, 15 and 2, 1 and 16, 7 and 10, $\frac{1}{2}$ and $16\frac{1}{2}$ are possible answers.

11. Write a problem that can be solved by this number sentence:

14 – 9 = ?

Answers will vary. Students' responses should present a situation where subtraction is appropriate. Other number sentences can be substituted to meet the level of your class. It is also interesting to make the number sentence similar to 14 – __ = 5. The problem associated with this sentence is quite different from the previous one in that the previous one asks for the difference, not the subtrahend or minuend.

12. Alexia said, "Addition and subtraction are related, I think." "Are you sure of that?" asked Malcolm. "They look very different." Do you agree with Alexia or Malcolm? Why or why not?

Answers will vary. Students may indicate some conceptual understanding of inverse operations, but other relations are possible, especially if fact families have been emphasized in your class. Encourage students to make generalizations.

13. Holly was excited. She said, "Look what I found out. 2 + 4 = 6 and 4 + 2 = 6." Molly said, "I can show you why that works." Describe what Molly did.

Students should indicate the commutative property by demonstrating that whenever two sets are combined, their total does not depend on the order. Accept either a textual explanation or pictures.

14. Jamika asked, "Is 7 – 5 the same as 5 – 7?" What would you say? Prove it.

No, it is not true. The difference is not the same when the order is reversed. Students should provide some model to show the difference between the two statements. The take-away model is useful in showing that seven cannot be taken away from five to get the same answer as when five is taken away from seven at this level of students' understanding.

15. Find two numbers whose difference is 4. Find two more numbers. How many other pairs can you find?

Answers will vary. For example, 4 and 0, 5 and 1, and 6 and 2 could be given.

16. Frank said, "Subtracting zero is easy." Why does Frank say that?

Answers will vary. Students may show a picture to support Frank's comment, or they may show number sentences.

III. Measurement

1. **Kenna said, "My arm is the length of 15 paper clips." Jim said, "That's impossible." Who do you believe? Why?**

   Students should disagree with Kenna. They may support their statement with a reference to the length of one paper clip in relation to the length of their arm.

2. **When I measure something, I use a . . .**

   Answers will vary. Students may describe any measuring tool. Encourage them to indicate what they would measure with that particular tool. For example, they may say they use a ruler to measure the length of an object. Or they may use a thermometer to measure temperature.

3. **I like to be outside when the temperature is ___ ° F because . . .**

   Answers will vary. Students should include some explanation for why they like to be outside with a specific temperature. Check for reasonableness of response.

4. **A tall container holds more (or less) than a short container because . . .**

   This prompt will provide interesting responses because height does not indicate volume nor capacity when the bases of the two objects are not consistent.

5. **To measure my height I would use a . . .**

   Responses should indicate the use of an appropriate tool. Other responses could indicate a measurement unit such as feet or inches.

6. **I weigh more than a _____ does but less than a _____ does. Explain.**

   Answers will vary. For example, a student may respond that they weigh more than a book does but less than a car does. Check for reasonableness of answers.

7. **I need a clock to . . .**

   Answers will vary. Response should show that students understand that clocks measure time.

8. **The first time I measured something was when . . .**

   Answers will vary. Use students' responses to link their experiences with the measuring experiences in the class.

9. **Shelly said, "I can do a lot of things in a half hour." "Really?" said Wen. "What can you do?" What do you think Shelly can do in a half hour?**

   Answers will vary. Watch for responses that are not reasonable for the given time frame.

IV. Geometry

1. **Meg found two triangles on the floor. How many different shapes can she make if she puts the triangles together? Draw the shapes.**

   Answers will vary. You can select two right triangles, two equilateral triangles, or other combinations, including combining two different types of triangles, for students to use. Your choice of triangles will influence the number of different shapes Meg can make.

2. **Name your favorite shape. Draw a picture of a place or thing where you can see your favorite shape.**

   Answers will vary. Students' response should include a shape's name. The picture should clearly show the shape.

3. **Draw yourself using different shapes.**

   Answers will vary. You can extend this prompt by asking students to draw themselves on large pieces of chart paper. Then the pictures can be hung around the room. Students can name the shapes used in each picture.

4. **"A sphere is like a ball," said Drew. "Is a cube like a box?" asked Ben. What will Drew say?**

   Most students respond that it is like a box. A few students may notice that not all boxes are cubes. Cubes have six faces and some boxes have open tops. Additionally, some boxes are rectangular prisms instead of cubes. To extend the question, ask students to explain their answer.

5. **A cone is like a cylinder because . . .**

   A cone and a cylinder both have a circular base. Students may provide other similarities. You can substitute any two other shapes for students to compare.

6. **Describe to your best friend how to build a cylinder.**

   Students should indicate in some way that you need a rectangle and two circles. Other three-dimensional shapes can be substituted for "cylinder."

7. **"A rectangle has four sides," said Dan. "How many sides does a circle have?" What would you tell Dan? Be sure to explain your answer.**

   This prompt can lead to an informal definition of "side." It may be appropriate to include a discussion about polygons as a class of shapes at this time.

8. **Corey found four sticks on the playground. They were each a different length. How many different quadrilaterals can he make? Draw and describe them.**

   A parallelogram is impossible if each side is a different length. Watch for trapezoids and other quadrilaterals in students' responses.

9. **Symmetry means . . .**

   This prompt can be given at the beginning of the chapter or unit on symmetry and then again at the end. You should see changes in students' understandings.

10. **Draw a shape that has one line of symmetry. Show the line of symmetry. How did you decide what shape to draw?**

    Answers will vary. Responses should include an explanation of the shape they selected. You can extend the prompt by asking students how they know how to draw a line of symmetry in a given shape.

11. **I see geometry at home when . . .**

    Answers will vary. Responses should have some reference to geometry. For example, students may show shapes in the flooring of their home or draw parts of the house such as a door that reminds them of a shape.

12. When I find the perimeter of a room, I measure . . .

Students should describe or draw the measuring of the room boundaries.

13. Words like *over*, *under*, and *beside* are important because . . .

Answers will vary. Responses should indicate relative position or placement of objects.

14. Jemel cannot remember what *under* means. Draw a picture to help him.

Answers will vary. Students' drawings should show a relation indicating under. Any directional word can be substituted for under.

15. An angle is . . .

Answers will vary. Students' ideas and drawings can be used to informally define angle.

16. Write or draw everything you know about a right angle.

Answers will vary. For example, right angles are—

- *like a corner on paper.*
- *found in a rectangle or square.*
- *like the corner of a room.*

V. Data Analysis and Probability

1. **Carmelita said, "If something is certain to happen, what does that mean?" How would you answer Carmelita?**

   Answers will vary. Students may say that if an event is certain to happen, then they know it will definitely happen. Use this prompt to discuss ideas related to certainty and uncertainty.

2. **A bar graph is . . .**

   Answers will vary. Some students may raise the issue of what constitutes a bar graph or give an example of one.

3. **A graph tells me . . .**

   Answers will vary. Students should give some specific information that they could find on a graph such as comparisons of amounts or quantities.

4. **Before I make a graph, I need to know . . .**

   Answers will vary. Students should mention some key issues in constructing a graph such as the unit needed for the axes, the data to be graphed, a title, and what type of graph is appropriate for the data.

5. **"That's a nice bar graph," said Beth. "What do the bars mean?" What would you tell your friend Beth?**

   Answers will vary. Responses should refer in some way to the interpretation of data. You may want to show a graph that represents specific information.

6. Write about or draw an event that is *always* likely to happen.

Answers will vary. For example, students could write about the sun rising in the east or about March always following February.

7. Sara predicted that she would pick a three out of a deck of cards. What does *predict* mean?

Answers will vary. You may want to focus on the word's sense using events rather than cards.

Affective/Attitudinal Prompts: Grades 1–2

1. **When I hear the word *math*, I feel . . .**
2. **Math time is . . .**
3. **Draw a picture of how you look when you do math homework.**
4. **To do math problems, I need . . .**
5. **Numbers are . . .**
6. **My favorite math lesson is when . . .**
7. **I like (or don't like) working in a group because . . .**
8. **Draw a picture of how you look during math class.**
9. **Next year, I hope we study _____ in math because . . .**
10. **Geometry is . . .**
11. **Using group work in math makes me feel . . .**
12. **Arithmetic is . . .**
13. **Problem solving is . . .**
14. **My math book is . . .**

15. **I like (or don't like) math because . . .**

16. **My favorite thing in math this year was when . . .**

17. **I could learn more in math if . . .**

18. **A calculator helps (or doesn't help) me do math because . . .**

19. **To be a better math student, I need to . . .**

20. **Everyone should (or should not) use a computer in math because . . .**

21. **Math will help me when I grow up because . . .**

22. **Kay wanted to know why she has to study math. What would you say?**

23. **Draw a picture of a perfect math student.**

24. **I use math at home when . . .**

Process Prompts: Grades 1–2

1. **Carrie cannot remember what < or > means. Explain how you remember what they mean.**

   Answers will vary. Students should discuss how they know which direction to put the symbol OR how they decide what less-than or greater-than relationship is shown.

2. **To learn math, I . . .**

   Answers will vary. Students should describe how they think or how they study.

3. **To study for a math test, I . . .**

   Answers will vary. Encourage students to describe what they do before they take a math test. Do they think about things in a different way? Do they have to study for a math test?

4. **I can memorize basic facts better if I . . .**

   Answers will vary. Students should share strategies or mnemonics they use when they learn facts in mathematics.

5. **I can remember how to count because . . .**

   Answers will vary. Students should describe either a rote counting system or a one-to-one correspondence counting method.

6. **Show or tell Eric how you tell the difference between a triangle and a square.**

Answers will vary. Some students may focus on the number of sides, others on the number of angles. It is possible that they will address other characteristics of the shapes.

7. When I hear or see a math word I don't know, I . . .

Answers will vary. Students should describe strategies they use for making sense of something they are not familiar with.

8. I like to solve problems by . . .

Answers will vary. Students should specify what problem-solving strategy they use most often or prefer. If they describe a strategy but do not name it, this is an opportunity to name it.

9. I use a calculator when . . .

Answers will vary. It is possible that some students will indicate that a calculator should never be used.

10. If I forget what 8 + 6 is, I can . . .

Answers will vary. Students can share their strategies for remembering "lost" facts.

11. I remember subtraction facts because . . .

Answers will vary. Strategies that students use to remember facts can be shared so that other students have the opportunity to consider other methods for memorizing.

12. Learning math is easier when I . . .

Answers will vary. Students' responses may give you some indications about the types of instructional methods that support their learning.

13. Geometry is different from (or the same as) arithmetic because . . .

Answers will vary. Students may indicate that geometry and arithmetic are different because they deal with unlike topics.

14. The most important thing to learn about in math is . . .

Answers will vary. Students' responses should give an indication of the topics or ideas that they believe are important in a math class.

15. Math and reading are alike (or different) because . . .

Answers will vary. If you are striving to connect mathematics and language in your class, students' responses will give you evidence of the progress you are making.

16. When I need to round a number, I think . . .

Answers will vary. Students should describe their rounding methods.

17. I get help in math when . . .

Answers will vary. Students should describe what prompts them to get help in mathematics.

18. Using base-ten blocks helps me . . .

Answers will vary. Manipulatives can help develop ideas, and if students are specific in their responses, you should be able to identify ways in which they link manipulatives with mathematical ideas.

19. When I compare the size of two numbers, I think . . .

Answers will vary. Students should share their methods for comparing numbers.

20. The thing I understand the best in math is _____ because . . .

Answers will vary. You can ask students to focus on a particular chapter or topic so that you get specific information about their understandings.

21. The thing I think I need more work on in math is _____ because . . .

Answers will vary. You can ask students to focus on a particular chapter or topic so that you get specific information about their understandings.

22. The hardest problem in math that I can solve is . . .

Answers will vary. Have students solve the problem.

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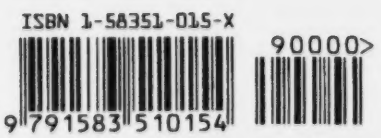

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